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PLANT IMMIGRANTS

Descriptive notes furnished mainly by Agricultural Explorers and Foreign Correspondents relative to the more important introduced plants which have recently arrived at the Office of Foreign Seed and Plant Introduction of the Bureau of Plant Industry of the Department of Agriculture, together with accounts of the behavior in America of previous introductions. Descriptions appearing here are revised and published later in the Inventory of Plants Imported.

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BUREAU

OF

PLANT INDUSTRY

No. 120.

APRIL 1916

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Applications for material listed in these multigraphed sheets may be made at any time to this Office. As they are received they are placed on file, and when the material is ready for the use of experimenters it is sent to those on the list of applicants who can show that they are prepared to care for it as well as to others selected because of their special fitness to experiment with the particular plants imported. Do not wait for the annual List of New Plant Introductions.

One of the main objects of the Office of Foreign Seed and Plant Introduction is to secure material for plant experimenters, and it will undertake as far as possible to fill any specific requests for foreign seeds or plants from plant breeders and others interested.

Permission to publish on application only.

Cacara erosa (L.) Kuntze. (Fabaceae.) 42567. Seeds from Shanghang, China. Presented by Mr. F. J. Wiens. "The root is edible and has a sweet delicious taste. The seeds are planted or sown in April or May and the flowers are all cut down except those wanted for seeds. The natives tell me the seeds are very poisonous." (Wiens.)

Careya australis (Benth.) F. Mueller. (Lecythidaceae.) 42464. Seeds from Brisbane, Australia. Presented by Mr. J. F. Bailey, Director Botanic Gardens. A large myrtaceous tree with alternate undotted leaves, large red flowers and globular, fleshy, edible fruit with a hard rind. The bark is made into twine and the wood, which is a light grey color, red in the center, close in grain and tough, is easily worked. (Adapted from Bailey, Queensland Flora, p. 667, 1900.)

Cassia angustifolia Vahl. (Caesalpiniaceae.) 42429. Seeds from Khartoum, Sudan, India. Presented by Mr. R. Hewison, Assistant Director of Agriculture. A small shrub, native of Arabia and East Africa and largely cultivated in parts of South India. It furnishes Tinnivelly Senna, the best known variety of this medicinal product. (Adapted from H. F. MacMillan, Handbook of Tropical Gardening and Planting, Ed. 2, p. 536, 1914.)

Chusquea culeou E. Desvaux. (Poaceae.) 42388. Seeds from Bariloche, Argentina. Presented by Dr. Joseph Vereertbrugghen. "Canea, the bamboo from this Cordillera. It is difficult to get ripe seed but at last I believe I have the real stuff, full grown, ripe and well dried. According to an agricultural paper of Buenos Aires, they have never tried to get this Bamboo from seed but transplanted the roots." (Vereertbrugghen.)

Cicer arietinum L. (Fabaceae.) 42454, 42456-42462. Seeds of chickpeas from Spain. 42454 presented by Mr. Thomas R. Geary, American Vice-Consul at Malaga; 42456-42458, by Mr. Paul H. Foster, American Consul at Jerez de la Frontera; and 42459-42462, by Mr. Robertson Honey, American Consul at Madrid.

Cicer arietinum L. (Fabaceae.) 42530-42531. Chickpea seed from Cairo, Egypt. Presented by Mr. Thomas W. Brown, Director, Horticultural Division, Giza Branch, Ministry of Agriculture.

Citharexylum barbinerve Cham. (Verbenaceae.) 42533. Seeds from Buenos Aires, Argentina. Presented by Sr. Benito J. Carrasco, Director Botanic Gardens. "Magnificent ornamental tree, with fragrant flowers, red fruits, flexible vibrant wood, used in the manufacture of guitars, from the cool and subtropical regions of Argentina." (Carrasco.)

Citrus limonia Osbeck. (Rutaceae.) 42606. Seeds from

Ch'ung-ch'ing, China. Presented by Mr. E. Widler. "This lemon answers almost the description of the Ichang lemon, excepting that its seeds are much smaller, and the inside seems to be all pith. These Szechwan lemons grow about 100 miles distant from Ch'ung-ch'ing. Chinese name, *Hsiang yuan*." (Widler.)

Colocasia esculenta (L.) Schott. (Araceae.) 42450. Taro tubers from Glenwood, Hawaii. Presented by Mr. J. B. Thompson, Superintendent, Glenwood Sub-station. "Kuoho. An up-land taro. This variety was grown quite commonly around Hilo at the time of my visit to Hawaii in 1913, and was considered to be one of the best. The corms and tubers are very acrid in the raw state and require longer cooking to destroy the acridity than is necessary to cook them to a soft, mealy condition. The quality is good when the taro is thoroughly cooked." (R. A. Young.)

Cytisus dallimorei Rolfe. (Fabaceae.) 42552. Cuttings from Kew, England. Presented by Sir David Prain, Director, Royal Botanic Gardens. "A hybrid raised at Kew in 1900 by crossing *C. scoparius* var. *Andreanus* (seed bearer) with *C. albus*. It is a tall shrub, perhaps 8 or 9 feet high, of thin, erect habit, suggesting that of *C. scoparius*. Leaves mostly trifoliate, downy, young wood ribbed. Flowers about $\frac{5}{8}$ inch long, the whole of the petals suffused with beautiful shades of rosy pink deepening on the wing-petals to crimson; the almost orbicular standard petal is $\frac{5}{8}$ inch long, darker outside than within, keel almost white. Calyx helmet-shaped, shining brown, slightly downy, $\frac{1}{8}$ inch long; flower-stalk $\frac{1}{4}$ inch long, downy. At each node the flowers are solitary or in pairs. This beautiful broom is quite distinct from any other in cultivation, and is the first hybrid broom raised by artificial cross-fertilisation, all its predecessors having originated as chance crosses made by insects. It is propagated by grafting on Laburnum. As it flowers regularly and in great profusion in May, it ought in time to become a popular garden shrub. (W. J. Bean, Trees and Shrubs Hardy in the British Isles, vol. 1, p. 458.)

Eugenia pungens Berg. (Myrtaceae.) 42536. Seeds from Buenos Aires, Argentina. Presented by Sr. Benito J. Carrasco, Director Botanic Gardens. "Guabiyu. An ornamental fruit tree, from the temperate and hot regions of Argentina." (Carrasco.)

Hakea spp. (Proteaceae.) 42600-42604. Seeds from Ventimiglia, Italy. Received through the Superintendent, La Mortola Garden. 42600, *H. cucullata* R. Brown., 42601, *H. elliptica* R. Br., 42602, *H. laurina* R. Br., 42603, *H. suaveolens* R. Br., 42604, *H. varia* R. Br. "Drought-resistant plants which endure moderate frost and are therefore well adapted to the

drier parts of the South and Southwest. In California they are grown as far north as Sacramento. One of these, *H. laurina*, produces strikingly handsome flowers; *H. elliptica* is prized for the bronze color of its young foliage; while the spiny-leaved species are serviceable for planting in public parks or in any place where it is necessary for shrubs to protect themselves from pedestrians or vandals. (Bailey's Standard Cyclopedia of Horticulture, vol. 3, pp. 1427-1428.)

Hibiscus sabdariffa L. (Malvaceae.) 42471-42475. Seeds of five varieties of roselle from Manila, Philippine Islands. Presented by Mr. H. T. Edwards, Director, Bureau of Agriculture.

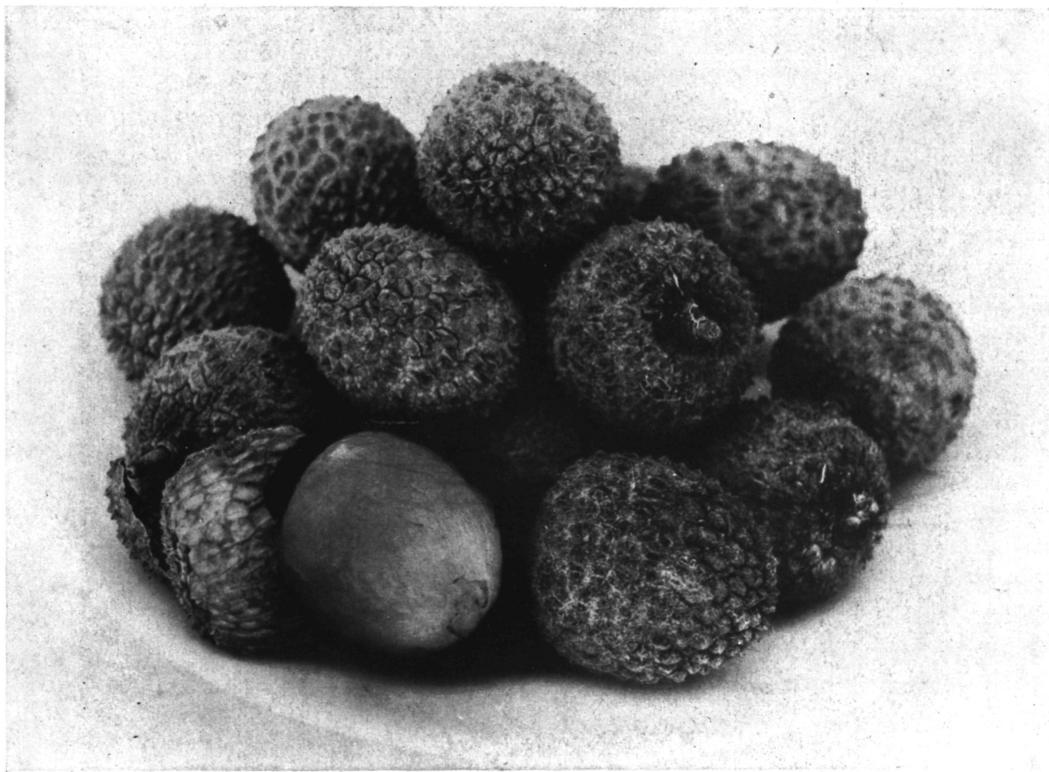
Inodes neglecta (Beccari) Cook. (Phoenicaceae.) 42522. Seeds from Azua, Santo Domingo. Received through Dr. J. N. Rose, U. S. National Museum. "A tree about 20 feet high, with large, fan-like leaves and large, more or less drooping flower clusters. It doubtless would prove a valuable palm for introduction into the warmer parts of this country." (Rose.)

Macadamia minor F. M. Bailey. (Proteaceae.) 42468. Seeds from Brisbane, Queensland, Australia. Presented by Mr. J. F. Bailey, Director Botanic Gardens. A large shrub or small tree with slender branches, three-parted leaves, often crowded at the ends of the branches, and edible nuts about $\frac{7}{8}$ inch long and $\frac{3}{4}$ inch in diameter. A native of Queensland. (See F. M. Bailey, Queensland Agricultural Journal, vol. 25, p. 11, 1910.)

Malus pumila Miller. (Malaceae.) 42638. Seeds of Paradise apple from Christiania, Norway. Presented by Mr. Rolf Nordhagen, Botanic Garden. "A bushy apple growing apparently rarely over 5 feet in height. A native of the Caucasus, from whence it probably was introduced into Western Europe, where it is now so extensively used as a dwarfing stock for apples. This shrubby apple produces red apples of fair quality, is very drought resistant and stands high summer temperatures. May be used in hybridisation work, and in creating a strain of bush-apples." (F. N. Meyer.)

Mesembryanthemum spp. (Aizoaceae.) 42444-42448. Plants from San Francisco, Calif. Presented by Mr. John McLaren, Golden Gate Park. 42444, *M. aequilaterale* Haworth, Fig-mari-gold. 42445, *M. bicolorum* L. 42446, *M. floribundum* Haworth, Ice-plant. 42447, *M. pugioniforme* L. 42448, *M. spectabile* Haw.

Nephelium spp. (Sapindaceae.) 42384-41385. Seeds of *N. lappaceum* L. (Rambutan) and *N. mutabile* Blume (Pulassan) from Buitenzorg, Java. Presented by Dr. J. C. Koningsberger, Director, Botanic Garden. "Rambutan. A handsome spreading tree, native of Malaya, yielding a profusion of bright red or orange-yellow fruits, the latter being produced in large



FRESH FRUITS OF THE LITCHI (*Litchi chinensis* Sonnerat), S. P. I. No. 40850.

The dried litchi or litchi "nut" is already well known on the American market, but the fresh fruit, which is incomparably superior to the "nut," has not yet found its way into our markets. The thin rind, when broken between the fingers and taken off, leaves an ivory white, firm, but very juicy mouthful which melts in the mouth, leaving a rather large, smooth seed behind. It has a fragrance suggestive of some tropical perfume, but also sufficient character to make it generally appreciated and insure a high price being paid for it. The photograph is of a shipment sent from Honolulu, Hawaii, by Mr. J. E. Higgins. The fruits were 16 days on the road and yet reached the department in excellent condition. Natural-size photograph (P13521FS), by Mr. E. L. Crandall, June 24, 1915.



THE OLDEST LITCHI IN HAWAII.

To Mr. Afong, a Chinese gentleman, is due the credit for the first introduction of the litchi tree into Hawaii. In 1870 he brought a plant from his own country and planted it in his dooryard at the corner of South School Street and Nuuanu Avenue, Honolulu. Just how soon it began to bear is not known. In 1896 it was bearing well and it is reported that he sold the crop from it at 3 cents per fruit. Now that the tree is 46 years old it is said to have its off years. Evidently the litchi is a long-lived slow-growing fruit tree. Experiments in Florida and southern California appear to prove the possibility of litchi cultivation on the American mainland as well as on the more tropical islands. Photograph (P11879FS) by Mr. R. A. Young, in Mr. Afong's yard in Honolulu, August 12, 1913.

clusters suspended from the ends of the branches, presenting a very ornamental effect. Each fruit is of the size of a large gooseberry, covered with long soft colored spines, the interior being occupied by a large seed, surrounded by a layer of white opaque pulp (aril), which is of an acidulous agreeable taste. Birds and bats are partial to it. The tree is readily propagated from seed, but the best varieties should be raised by grafts or gootees. Thrives up to 2,000 feet elevation." (MacMillan, Hand book of Tropical Gardening, 2nd Ed., p. 176.) "Pulassan. A Malayan tree, similar to *rambutan* in appearance, but differing in the fruit and in the leaves being grey beneath. The fruit is larger than the *rambutan*, of a deep purple brown, with short blunt processes, and according to Ridley, the flavor is decidedly superior to that of the latter fruit." (MacMillan, Hand-book of Tropical Gardening, 2nd Ed., p. 176.)

Osterdamia matrella (L.) Kuntze. (Poaceae.) 42389. Seeds from Sydney, New South Wales, Australia. Presented by Dr. J. H. Maiden, Director Botanic Garden. A grass of considerable value on littoral swamps and dry flats near the sea. According to Kirk, it is found sometimes forming a compact turf on dry land, and affording a large supply of succulent herbage for horses, cattle and sheep. Its value, however, in such localities, if bulkier grasses would grow there, must be comparatively little, as, from its close-growing habit, it chokes out all other species. It is evidently much relished by stock, and is worthy of introduction in sand-hill districts near the sea, or saline soil inland. (Abstract from Maiden, Useful Native Plants of Australia, p. 112.)

Prinsepia utilis Royle. (Amygdalaceae.) 42623. Seeds from British India. Presented by Mr. M. Buysman, Lawang, Java. "A shrub, 3 to 5 feet; branchlets green, soft, pubescent when young; pith septate. Leaves 1-5 inches, coriaceous, acuminate, entire or serrate. Flowers $\frac{1}{4}$ inch in diameter, white, usually opening in autumn. Drupes $\frac{1}{2}$ to $2/3$ inch, purple, subtended by the withered calyx. Dry rocky hills on the temperate Himalayas, altitude 4,000 to 8,000 feet, from Hazara to Sikkim ascending to 9,000 feet, and Bhotan; Khasia mountains, altitude 5,000 to 6,000 feet." (Hooker, Flora of British India, Vol. 2, p. 323.)

Prunus spp. (Amygdalaceae.) 42439-42440. Seeds from Petrograd, Russia. Collected by Miss Zinaida ab Minkwitz in Turkestan in 1914, and presented by Dr. A. Fischer de Waldheim, Director, Imperial Botanic Gardens. 42439, *P. prostrata* Labill., mountain cherry. 42440, *P. spinosissima* (Bunge) Franch., wild almond.

Sasa albo-marginata (Miq.) Makino & Shibata. (Poaceae.) 42656. One plant from Yokohama, Japan. Purchased from the Yokohama Nursery Company. (See *Arundinaria*, *Bambos*, and *Phyllostachys* introductions.)

Spiraea wilsoni Duthie. (Rosaceae.) 42449. Cuttings from Jamaica Plain, Mass. Presented by the Arnold Arboretum. "Closely allied to, perhaps only a variety of *S. henryi*. It is distinguished among other points by its smooth or slightly silky flower-stalks. Leaves of flowering shoots entire, downy above, duller green." (W. J. Bean, *Trees and Shrubs Hardy in the British Isles*, Vol. 2, p. 535.) Perfectly hardy and among the most ornamental of all the numerous species and hybrids of this genus. (Sargent, Arnold Arboretum Bulletin, No. 19.)

Strychnos spinosa Lamarck. (Loganiaceae.) 42596. Seeds of Kaffir-orange from Inhambane, East Africa. Presented by Rev. Pliny W. Keys, Methodist Episcopal Mission. "An evergreen shrub 8-10 feet high, seldom a small tree; having decussate short branches often ending in a spine, and ob-ovate 3-5 nerved leaves 1-2 inches long, 3/4-1 inch wide, rounded at the point, tapering to a short petiole, and often with the two sides from the midrib more or less in-folded upon one another. Cymes mostly terminal on short twigs, paniculate, rather few-flowered. Calyx-lobes long, subulate. Corolla-tube and segments glabrous, but throat bearded by a complete ring of hairs half as long as the segments. Stamens arising from the base of the corolla-tube, and anthers connected by an interwoven woolly mass. Ovary 1 celled, ovules numerous, surrounding a central free placenta. Fruit size of an orange, or larger, with rind green when young, yellow when ripe, hard shell, and numer-ous flat seeds lying in acidulous edible pulp. Occurs sparingly along the coast from East London eastward and is more abundant in Natal, Tropical Africa and Madagascar. It is seldom cultivated except as a curiosity, and the natives only eat it when food is scarce. The timber is too small to be of value." (Sim, *The Forests and Forest Flora of Cape Colony*, p. 274.)

Tamarix spp. (Tamaricaceae.) 42441-42443. Seeds of three species of *Tamarix* from Petrograd, Russia. Presented by Dr. A. Fischer de Waldheim, Director, Imperial Botanic Gardens. 42441, *T. florida albiflora* Bunge. 42442, *T. karelini hirta* Litw. 42443, *T. pentandra* Pallas. For trial as hedge and windbreak plants in the West.

Uvaria rufa (Dun.) Blume. (Annonaceae.) 42470. Seeds from Manila, Philippine Islands. Presented by Mr. H. T. Edwards, Director, Bureau of Agriculture. "Banauac; Susong Calabo. Fruits of this species are oblong, reniform, 3,

sometimes 4 centimeters in length, in bunches of 18 to 20 averaging 115 grams in weight; surface bright red, velvety, ferruginous pubescent; skin thin, brittle; flesh scant, whitish, juicy, aromatic subacid without a trace of sugar; quality rather poor; seeds many. Season, September." (West-
er, in Philippine Agricultural Review, Vol. 6, No. 7, p. 321, July 1913.)

Vitis spp. (Vitaceae.) 42477-42519. Hybrid grape cut-
tings from Palermo, Italy. Received through Mr. F. Paulsen,
Director, R. Vivaio di Viti Americane, at the request of
the Superior Minister of Agriculture. In 1904, Dr. Clemente
Grimaldi wrote concerning his work on the hybridization of
grapes: "Notwithstanding the labors given for almost 15
years hybridization, I have believed that I should maintain
the utmost reserve in publishing the hybrids and until now
I have made known only six, all stocks, which are the fol-
lowing: Nos. 50, 88, 125, 791, 110, and 323. Among the
hybrids obtained by me, the following at present give me
the hope that they will be of service as direct producers:
Nos. 88, 97, 317, 953, 1075, and 1132." These hybrids were
requested at the suggestion of Dr. Gustav Eisen, and re-
present some of the best results obtained from the hybrid-
ization of American species with *Vitis vinifera* strains of
Italian origin, for the purpose of securing varieties re-
sistant to Peronospora and other diseases. Of the Ruggéri
and Paulsen hybrids descriptions have not been accessible,
but have probably appeared in later volumes of *La Viticoltura Moderna*.

Zea mays L. (Poaceae.) 42642. Seeds of Papago sweet
corn from Tucson, Arizona. Presented by Mr. George F. Free-
man, Acting Director, University of Arizona. "We do not
really expect that this will be promising as a sweet corn
outside of the Southwest, but some results in eastern
Kansas and Nebraska last year indicate that it might prove
a valuable silage or forage corn in the humid sections."
(Freeman.)

AVOCADOS.

During the past two years the winter-bearing Guate-
malan type of avocado has been attracting an increasing
amount of attention in Florida. Interest in this type was
first awakened by the fruiting of several seedlings at the
Miami Plant Introduction Garden, which served to demon-
strate that this remarkable type would mature its fruits
in Florida at the precise season of the year when avocados
are most desired. Heretofore the avocado crop has commenced
in July or August and lasted until December, with a few

late fruits occasionally hanging on the trees until the end of January or February. Trapp, the latest commercial variety, matures its fruit in late fall, and frequently carries some of the crop until the first of January, but after this time the quantity of avocados marketed from south Florida has been negligible. With the Guatemalan type it will be possible to supply the markets abundantly from December to April, the season of the year when fresh fruits are scarce and when, consequently, there should be an excellent demand for avocados. In the past it has always been the latest avocado which brought the highest prices. The Guatemalan type has an additional advantage in its thick, hard skin, which makes the fruit an excellent shipper. In quality some of the varieties of this type are splendid excelling, in all probability, most of the summer-fruiting varieties which are grown in Florida. The first trees of this type which came into bearing at Miami were grown from seeds sent in by G. N. Collins from Guatemala in 1901. None of these seems likely to become of importance as a commercial variety, but they have served to point out the value and possibilities of this type for Florida. Another seedling (S.P.I.No. 26710) of the same type, grown at the Miami Garden from a seed sent from Los Angeles, Calif., in 1908, has proved to be a first-class fruit, and has been considered worthy of propagation as a named variety. This fruit, which is now called Taylor, has been in bearing at Miami for 3 years. Its origin and history are as follows: In 1908 J. H. Walker of Hollywood, Calif., sent fruits of two seedlings growing on his place to W.A.Taylor, pomologist of the Department at Washington. These varieties, though unnamed at that time, have since been called "Challenge" and "Royal". Mr. Taylor transmitted one of the seeds to the Office of Foreign Seed and Plant Introduction, and it was sent to Miami to be grown. It is not known whether this seed was from the Challenge or Royal. The variety is now being propagated and disseminated at the Miami Garden. Another promising avocado which has recently been propagated rather extensively at the Miami Garden is Butler, S.P.I. No. 26690. This is a summer-ripening fruit of the West Indian type, and hence scarcely so interesting at the present time as a variety of the winter-bearing Guatemalan type. However, a medium sized, prolific summer variety of good quality has not yet become established commercially in south Florida, and it would seem that in Butler we have a fruit of considerable merit. Butler originated as a seedling at the Miami Garden, the seed having been received from C. W. Butler, of St. Petersburg, Fla., in 1904. The tree came into bearing in 1909, and has proved to be un-

usually prolific. The fruit weighs about a pound, is oblong to obovate in form, light green, with flesh of excellent flavor and quality. Attention is now being centred on the Guatemalan type at the Miami Garden. A variety introduced from Guatemala two years ago by O. F. Cook of the Bureau (S.P.I. No. 38549) is being propagated, and should come into bearing within another year or two. The variety Nutmeg, (S.P.I. No. 36604) from Honolulu, came into bearing last year, but has not yet had sufficient trial to permit an accurate estimate of its value.

NOTES FROM CORRESPONDENTS ABROAD.

Mr. J. H. Cameron writes from Londiani Farms Limited, Londiani, British East Africa, May 1, 1916.

"I wonder if you would be interested to read a few lines descriptive of this extraordinary country in regard to its flora--of its fauna you will of course have read in Mr. Roosevelt's book 'African Game Trails'. I am living in a part where Mr. Roosevelt did quite a lot of his shooting and do quite a lot of it myself; thousands of head of great antelope and other game roam on this estate. I am the manager of a farm of thirty thousand acres situated exactly on the equator; but at an elevation of from eight thousand to ten thousand feet above the level of the sea. On account of this great elevation the climate is most salubrious; I have never known the temperature to rise above 86° F. or drop below 45°. We have a large rain-fall too, so that we can and do grow almost anything.

"On this estate flax is the main industry; we both grow and manufacture the fibre and it commands a price on the London market that compares well with the best Belgian and French flax. On account of the unfortunate destruction of the first named country we are of course experiencing a boom in price. We also raise a large number of cattle, using the native cow as a basis and crossing it with an imported English Shorthorn bull. We shall then breed up from that cross to something better.

"At our nine thousand foot level we work the forests, cutting the timber, most of which is sold in the colony but some we send to England, more especially the cedar, *Juniperus procera*, a splendid tree growing 150 to 200 feet high. We ship it in baulks 12" by 12" up. I do not know what they resaw it into in England, but here we build our houses with it, inside and out; we also saw it up in a special mill for pencil cedar. *Olea hochstetteri* (native name *m'shraghue*), a fine olive: this wood we saw into ties for the Uganda Railway, and for the new railways that our military authorities are

pushing forward every day. We also cut it into wagon parts, bridge material and furniture; it is the hardest wood I have ever known with the exception of the Quebracho that I came across in the forests of north Argentine. Another olive we have, *Olea sp.* (native name *m'weri*), much lighter than the other olive, but very tough. It is as red as rose-wood, used for ox yokes and furniture. There is still another *Olea* called brown olive, a very handsome wood used for hubs, spokes and felloes for completely making jinrickshaws, a form of vehicle much used in Mombasa, Nairobi and other towns.

"For most of the local building *Podocarpus gracilior* takes the place of the pines, etc., of Europe and North America. It is a splendid tree with a perfectly straight bole for 80 or more feet. It is the principal forest tree at the 7000 and 8000 feet level. The cedar goes higher; I have cut it at 9548 feet. Above that the forests dwindle out and it becomes dense bamboo (and buffalo), the latter a very nasty customer to meet. The pasture on these hills at 9000 and 10000 feet is the finest I have ever seen, not even excepting England. Much lower down at from sea level to 1000 feet grow mangoes and all the tropical trees, palms, dracaenas, etc.

"Growing on these hills but having no utility purposes we have a giant heath which I call *Erica gigantea*, 25 feet high. It usually grows in broken gullies where grass will not hold and is favourite 'cover' for lions. *Lantana ericoides* grows on the outer edge of the forest and the roadsides, as also does heliotrope, a giant asparagus (edible), an herbaceous Althea or Hibiscus, and many beautiful flowers whose names I know not. In my garden I grow oranges, mandarins, lemons, limes, loquats, coffee, and tea. Coffee is a great industry at the 6000 foot level. In one small district of Kisambu near Nairobi there are 12000 acres planted in coffee. I also have strawberries (imported), native raspberries, Cape gooseberries, which is not a gooseberry at all but an excellent fruit. I will send you some seed as it would grow well in all your non-freezing states and will even stand a few degrees of frost as I have seen it do so at 10000 feet. I have what are called tree tomatoes, the bush (perennial) grows 8 feet high with large shiny leaves that get smaller as the tree gets older. The fruit looks like a large reddish purple plum but has many small seeds like the tomato and a very pleasant taste, and is used for pies and puddings. It bears profusely all the year round.

In the matter of vegetables we grow here everything that is found in an English or North American garden only they grow 12 months in the year.



A CHERIMOYA SUGAR APPLE HYBRID (*Annona cherimola* \times *A. squamosa*).

In an attempt to combine the good qualities of the Cherimoya and the Sugar Apple Mr. Edward Simmonds has succeeded in producing a hybrid between these two species. The tree shown in the illustration is one of these hybrids. It has already borne a number of fruits of most excellent quality and appearance. The fruit appears to be intermediate between the two species, and the tree shows an unusual vigor as is common in many hybrids. There are many species of *Annona* and this hybrid indicates the possibility of mingling them into superlative hybrid varieties. For this purpose a collection of *Annona* species has been assembled at the Miami Field Station. Photograph (P16155FS) by Wilson Popenoe, Miami, Fla., August 10, 1914.



PRUNUS GLANDULOSA Thunberg, S. P. I. 38337.

A very ornamental Chinese shrub, called *Yü hua mei*, having small, double white flowers. Numerous varieties of the species are in cultivation, some with rosy flowers, others with white flowers, dotted with red. Photograph (Chico 659) by R. L. Beagles, Test Nursery, Chico Field Station, April 15, 1916.

In my flower garden I grow the most beautiful roses I ever saw. There is not a day in the year that I am without their blooms; also all the old English garden perennials, annuals, etc. *Passiflora edulis* and its cousin *P. trifasciata* cover my house and mixed up with it are *Mandevilla suaveolens* and *Cobaea scandens*, the latter though with very much larger flowers than I ever raised in either Virginia or Devonshire.

"We have 250 acres in black wattle, *Acacia decurrens*. It is now just 3 years old and is 30 feet high. In another year we shall cut it and strip the bark which is used for tanning in Europe. Sisal hemp is a great industry here, the fibre of *Agave rigida* var. *sisalana*. It is used for cordage, but of course you grow it in Florida so know all about it. Among other things that we grow here, but at different elevations, are coffee, wheat, rubber, cotton, cocoanuts, mangoes, and in live stock, cattle, horses, pigs, sheep, ostriches.

"The dasheen, by the way, has been grown here by the natives from long before the coming of the white man. They call it *Miwoo* pronounced meewo. One tribe called Kikuyus are never without it. It would be interesting to know how it came here, but of course the native knows nothing of his history and cares nothing. Unlike the tribes of south and central African savages, these of East Africa have no religion or superstitions. They worship one god which they call *Tumbo* and it means their stomach. The only thought they have beyond that is how to acquire as many wives as possible. Natives use a nickname for everybody; they never learn one's real name but name one according to any peculiarity they may have.

"The agricultural tribes are great farmers. Their methods are those of the stone age. The women do all the work; the men hunt, drink, steal, and stand around naked and discuss the value of the goats, sheep and cattle which they barter for more wives. The amount of maize grown and exported by just one tribe, the Kavirondo who live along the shores of Lake Victoria Nyanza, is astonishing. Another tribe raises quantities of beans, peas and potatoes. Today I have stood on top of a great hill on this farm, 10000 feet high, but only about 1500 feet above the surrounding table land, and looked down through field glasses into Lake Victoria 80 miles away to the west, Kilimanjaro 19000 feet high away to the southeast, over to Lakes Rudolf and Baringo to the north, and German East Africa 30 miles to the south. At the foot of the hill great herds of antelope and countless zebra graze. I have caught some of the zebra foals and intend when they are fully grown to cross them with my Somali pony stallion.

I am sending you seeds of a fine Amaryllis which grows here on the veldt, and which we wrongly call the Veldt Lily. It may be Hippeastrum; its flowers are immense white with pink stripes; its bulb is a foot long. It seems to thrive in the very dry weather."

*SCIENTIFIC STAFF OF THE OFFICE OF FOREIGN SEED AND
PLANT INTRODUCTION OF THE BUREAU OF PLANT INDUSTRY.*

Washington Staff.

David Fairchild, Agricultural Explorer in charge.

P. H. Dorsett, Plant Introducer in charge of Plant Introduction Field Stations.

B. T. Galloway, Plant Pathologist, in charge of Plant Protection and Propagation Investigations.

Peter Bisset, Plant Introducer in charge of Foreign Plant Distribution.

Frank N. Meyer and Wilson Popenoe, Agricultural Explorers.

H. C. Skeels, Botanical Assistant, in charge of Collections.

S. C. Stuntz, Botanical Assistant, in charge of Explorers' Notes, Foreign Correspondence and Publications.

R. A. Young, Botanical Assistant, in charge of Dasheen and Tung Oil Investigations.

G. P. Van Eseltine, Assistant, in charge of Label Catalogue, and Office Herbarium.

Nathan Menderson, Assistant, in charge of Chayote Investigations.

David A. Bisset, Assistant in Plant Introduction.

Staff of Field Stations.

R. L. Beagles, Farm Superintendent in charge of Chico, Calif., Plant Introduction Field Station.

H. Klopfer, Plant Propagator.

J. M. Rankin, Assistant Farm Superintendent in charge of Rockville, Md., (Yarrow) Plant Introduction Field Station.

Edward Goucher, Propagator.

Edward Simmonds, Gardener and Field Station Superintendent in charge of Miami, Fla., Plant Introduction Field Station.

J. E. Morrow, Assistant Superintendent, Brooksville, Fla., Plant Introduction Field Station.

Collaborators.

Mr. Aaron Aaronsohn, Haifa, Palestine.

Mr. Thomas W. Brown, Cairo, Egypt.

Mr. H. M. Curran, Laurel, Md.

Mr. M. J. Dorsey, University Farm, St. Paul, Minn.

Dr. Gustav Eisen, California Academy of Sciences, San Francisco, Calif.

Mr. E. C. Green, Serviço do Algodão no Brazil, Rio de Janeiro, Brazil.

Mr. A. C. Hartless, Saharanpur, India.

Mr. E. J. Kraus, University of Chicago, Chicago, Ill.

Mr. Barbour Lathrop, Chicago, Ill.

Miss Eliza R. Scidmore, Yokohama, Japan.

Mr. Charles Simpson, Little River, Fla.

Dr. L. Trabut, Director, Service Botanique, Algiers, Algeria.

Mr. E. H. Wilson, Arnold Arboretum, Jamaica Plain, Mass.